

**What the invention claimed is:**

1. A battery cap and wireless transmitter-receiver circuit assembly for mobile telephone comprising:

a battery cap covered on a mobile telephone;

5 a battery installed in said battery cap;

a wireless transmitter-receiver circuit installed in said battery cap, said wireless transmitter-receiver circuit comprising a signal line adapted for connection to a voice signal input/output jack in said mobile telephone for enabling said mobile telephone to communicate with a remote wireless transmitter-receiver device; and

an on/off switch installed in said battery cap and adapted for controlling the operation of said wireless transmitter-receiver circuit.

15 2. The battery cap and wireless transmitter-receiver circuit assembly for mobile telephone as claimed in claim 1, wherein said battery cap comprises a charging jack electrically connected to the battery installed in said battery cap and adapted for receiving a battery charger to charge the battery installed in said battery cap.

20 3. The battery cap and wireless transmitter-receiver circuit assembly for mobile telephone as claimed in claim 1 further comprising an indicator light installed in said battery cap for indicating the working status of said wireless transmitter-receiver

circuit.

4. The battery cap and wireless transmitter-receiver circuit assembly for mobile telephone as claimed in claim 1 further comprising an electrically insulative sealing cover fastened to a  
5 back side of said battery cap and covered on said wireless transmitter-receiver circuit.

5. The battery cap and wireless transmitter-receiver circuit assembly for mobile telephone as claimed in claim 1, wherein the battery installed in said battery cap is a rechargeable storage  
10 battery.